

REMARKS

The Office action of January 28, 2004 has been received and its contents carefully noted.

Claims 1-25 are pending in the application. Claim 1 has been amended.

The above-mentioned amendment to Claim 1 should obviate the previous restriction requirement by having all claims relate to different embodiments of the same invention.

Claims 1-2, 5, and 7-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ma (U.S. Patent No. 6,188,823) in view of Tanaka et al. ("Tanaka") (U.S. Patent No. 6,115,173). Claims 3-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ma in view of Tanaka, and further in view of Maki (U.S. Patent No. 6,118,561). Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ma in view of Tanaka, and further in view of Nakano (U.S. Patent No. 5,438,445). Applicants respectfully traverse these rejections, and request allowance thereof in the continuation prosecution application for the following reasons.

The Claims are Patentable Over the Cited References

Claims 1-2, 5, and 7-10 are not made obvious by Ma and Tanaka

Claims 1-2, 5, and 7-10 stand rejected under § 103(a) in view of Ma and Tanaka. Applicants strongly contend that Ma and Tanaka,

either alone or in combination, fail to disclose the features recited in these claims as amended such as an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength.

Ma does not disclose this patentably distinct feature of receiving a wavelength division multiplexed signal (WDM) signal from a first transmission path, and wavelength-converting the signal to minimize SPM-GVD effect and FWM in a second transmission path in accordance with a zero-dispersion wavelength of the second transmission path. In strong contrast, Ma makes no mention of this recited feature as Ma solely discloses a dispersion technique using different optical fiber sections where one section has a zero-dispersion wavelength less than the operating wavelengths, and a succeeding section has a zero-dispersion wavelength greater than a zero-dispersion wavelength where this pattern is continually repeated throughout the overall transmission line (see col. 1, lines 38-47).

Therefore, as admitted in the Action, Ma makes completely no mention of wavelength conversion as recited and further makes no mention of minimizing SPM-GVD effect and FWM in a second

transmission path in accordance with a zero-dispersion wavelength as recited.

Similarly, Tanaka makes no mention of the recited feature of receiving a wavelength division multiplexed signal (WDM) signal from a first transmission path, and wavelength-converting the signal to minimize SPM-GVD effect and FWM in a second transmission path in accordance with a zero-dispersion wavelength. In contrast, Tanaka solely discloses continually wavelength-converting and amplifying signal light along an optical transmission system with the same zero-dispersion wavelength for multiple transmission paths (see FIG. 1; col. 3, lines 51-52). Tanaka does mention reducing FWM, but does not disclose reducing both FWM and SPM-GVD effect as recited and further uses a constant zero-dispersion wavelength transmission system in direct contrast to the recited feature.

Specifically, Tanaka states that "...supposing the zero dispersion wavelength of the transmission optical fibers 16-1 to 16-4 is λ_0 ." (see col. 3, lines 51-52). Applicants strongly contend that wavelength-converting a received signal to minimize SPM-GVD effect and FWM in a second transmission path in accordance with a zero-dispersion wavelength of the second path different than a first path as recited is significantly different from wavelength-converting and reducing FWM in transmission system with a constant zero-dispersion wavelength (λ_0) as disclosed by Tanaka.

Therefore, Ma and Tanaka, either alone or in combination, do

not disclose a first optical fiber transmission path for a wavelength division multiplexed signal to be input therefrom, a second optical fiber transmission path having a zero-dispersion wavelength different from the first optical fiber transmission path, and an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength as recited making the claimed invention patentably distinct and non-obvious from the cited references.

Claims 3-4 are not made obvious by Ma, Tanaka, and Maki

Claims 3-4 stand rejected under § 103(a) in view of Ma, Tanaka, and Maki. Applicants strongly contend that Ma, Tanaka, and Maki, either alone or in combination, fail to disclose the features recited in these claims such as an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength.

As contended above, the combination of Ma and Tanaka does not

disclose this recited feature. Further, Maki does not disclose this recited feature as Maki solely discloses an optical WDM transmitter. Thus, Ma, Tanaka, and Maki, either alone or in combination, do not disclose a first optical fiber transmission path for a wavelength division multiplexed signal to be input therefrom, a second optical fiber transmission path having a zero-dispersion wavelength different from the first optical fiber transmission path, and an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength as recited making the claimed invention patentably distinct and non-obvious from the cited references.

Claim 6 is not made obvious by Ma, Tanaka, and Nakano

Claim 6 stands rejected under § 103(a) in view of Ma, Tanaka, and Nakano. Applicants strongly contend that Ma, Tanaka, and Nakano, either alone or in combination, fail to disclose the features recited in these claims as such as an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so

as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength.

As contended above, the combination of Ma and Tanaka does not disclose this recited feature. Further, Nakano does not disclose this recited feature as Nakano solely discloses an optical WDM multiplexer system. Thus, Ma, Tanaka, and Nakano, either alone or in combination, do not disclose a first optical fiber transmission path for a wavelength division multiplexed signal to be input therefrom, a second optical fiber transmission path having a zero-dispersion wavelength different from the first optical fiber transmission path, and an optical repeater which receives the wavelength division multiplexed signal from said first optical fiber transmission path, wavelength-converts the received signal with respect to respective wavelengths thereof so as to minimize SPM-GVD effect and FWM in the second optical fiber transmission path in accordance with the zero-dispersion wavelength as recited making the claimed invention patentably distinct and non-obvious from the cited references.

Conclusion

In view of the amendments and remarks submitted above, it is respectfully submitted that all of the remaining claims are

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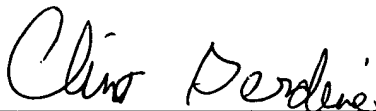
allowable and a Notice of Allowance is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayments to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

The Examiner is invited to contact the undersigned at (703) 205-8000 to discuss the application.

Respectfully submitted,

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